

WHAT IS CLAIMED IS:

1. A pipe joint structure comprising:

a vessel provided at an outer circumference thereof with a first flat surface and at a circumferential wall thereof with a through-hole whose one end is opened to the first flat surface and whose another end is opened to an interior thereof;

a joint fitting member provided in an interior thereof with an insertion hole whose inner diameter is larger than inner diameter of the through-hole and at one of an inner circumferential wall of the insertion hole and an outer circumferential wall thereof with a first screw thread, the joint fitting member being bonded to the vessel in such a manner that the first flat surface positioned radially inside the insertion hole surrounds an entire outer periphery of the through-hole opened to the first flat surface;

a joint member provided with an insertion portion having a second flat surface formed at an axial end thereof, and with a pipe connection portion having a conical pressure receiving seat formed at another axial end thereof and a pipe mounting screw thread at an outer circumference thereof, the insertion portion and the pipe connection portion being provided through central parts thereof with a fluid passage whose one end is opened to the second flat surface and whose another end is opened to the conical pressure receiving seat;

a distribution pipe provided at an end thereof with a conical portion; and

a mounting nut fastened into the pipe mounting screw

thread in a state that the conical portion is pressed against the conical pressure receiving seat,

wherein the joint member is further provided at one of a position inside the inner circumferential wall of the insertion hole and a position outside the outer circumferential wall of the joint fitting member with a second screw thread screwed into the first screw thread so that the insertion portion is inserted deep into the insertion hole, whereby the second flat surface is pressed against and in fluid tight contact with the first flat surface in a state that the fluid passage communicates with the through-hole.

2. The pipe joint structure according to claim 1, wherein the first screw thread is a female thread formed on the inner circumferential wall of the insertion hole and the second screw thread is a male thread formed on an outer circumference of the insertion portion.

3. The pipe joint structure according to claim 1, wherein the joint member is further provided outside the outer circumferential wall of the joint fitting member with a cylindrical pipe, and, further,

wherein the first screw thread is a male thread formed on the outer circumferential wall of the joint fitting member and the second screw thread is a female thread formed on an inner circumference of the cylindrical pipe.

4. The pipe joint structure according to claim 1, wherein the vessel is a common rail body for accumulating high pressure fuel in a common rail type fuel injection device.

5. The pipe joint structure according to claim 4, wherein the fluid passage formed in the joint member has an orifice, which serves to reduce fluid flow pulsation generating in the distribution pipe.

6. The pipe joint structure according to claim 1, further comprising:

a packing plate provided at a center thereof with a packing through-hole constituting a part of the fluid passage, wherein the packing plate is disposed between the first and second flat surfaces so that the second flat surface is pressed against and in fluid tight contact with the first flat surface via the packing plate.

7. The pipe joint structure according to claim 1, wherein a part of the fluid passage positioned in the pipe connection portion immediately adjacent to the conical pressure receiving seat constitutes a hexagonal hole.

8. The pipe joint structure according to claim 1, wherein the outer circumference of the pipe connection portion is provided with a plurality of grooves spaced circumferentially at given intervals and extending axially

so as to cross the pipe mounting screw thread.

9. A method of assembling the joint member to the joint fitting member in the pipe joint structure according to claim 1, comprising steps of:

holding an end of the pipe connection portion and a part of the outer circumference thereof on which the pipe mounting screw thread is provided; and

rotating the joint member relative to the joint fitting member so as to screw the second screw thread into the first screw thread so that the insertion portion is inserted deep into the insertion hole until the second flat surface is pressed against and in fluid tight contact with the first flat surface.

10. The method of assembling the joint member to the joint fitting member in the pipe joint structure according to claim 9 in use of a stad bolt fastening wrench having a box and a tool for rotatably driving the box, wherein an inner surface of the box is screw fastened to the pipe mounting screw thread until an inner bottom of the box comes in contact with the end of the pipe connection portion so that the end of the pipe connection portion and the outer circumference thereof on a side of the conical pressure receiving seat is held by the box and, further, wherein the box is turned by the tool so as to apply a rotating moment to the pipe connection portion so that the joint member is rotated relative to the joint fitting member so as to screw the second screw thread into the first

screw thread.

11. A method of assembling the joint member to the joint fitting member in the pipe joint structure according to claim 7 in use of a wrench, comprising steps of:

inserting the wrench into the hexagonal hole; and
rotating the wrench so that rotational moment is applied to the pipe connection portion.

12. A method of assembling the joint member to the joint fitting member in the pipe joint structure according to claim 8 in use of a wrench having a plurality of projections, comprising steps of:

inserting the projections of the wrench into the plurality of grooves; and

rotating the wrench so that rotational moment is applied to the pipe connection portion.